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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,618	03/17/2004	Jens Staecker	INF 2003 P 50524 US	4580
48154	7590	11/28/2007	EXAMINER	
SLATER & MATSIL LLP			NGUYEN, ANTHONY H	
17950 PRESTON ROAD				
SUITE 1000				
DALLAS, TX 75252				
			ART UNIT	PAPER NUMBER
			2854	
			MAIL DATE	DELIVERY MODE
			11/28/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/802,618	<b>Applicant(s)</b> STAECKER ET AL.	
	<b>Examiner</b> Anthony H. Nguyen	<b>Art Unit</b> 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13, 22, 23 and 28-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 22, 23 and 28-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) a patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-6, 22, 23, 28,29 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen (US 2002/0170880) in view of Sangu et al. (US 2001/0026638).

With respect to claims 1, 22 and 23, Chen teaches an arrangement for transferring information/structure and method of manufacturing a semiconductor wafer having a substrate 8 which is positioned and fixed on a chuck 26, a stamp 62 positioned over the substrate having elevated structure 66 serving as information/structure to be transferred to a patterning layer 6 on the substrate and a pair of alignment marks 68,70. The elevated structures of the stamp are physically contacted with the patterning layer of the substrate as shown in the step 88 (Chen, Fig.4). Chen does not clearly teach the plurality of infrared light sources and a plurality of infrared cameras. Sangu et al. teaches the plurality of X-ray sources or infrared light sources 1 and a plurality of CCD cameras or infrared cameras 2 for positioning a board 6 on a stage or chuck 8 (Sangu et al., Figs.1 and 5, paragraphs [0026] and [0036]). Note that Fig. 1 of Sangu et al. shows only the left half of the aligner and the same construction exist in the right. In view of the teachings of Sangu et al., it would have been obvious to one of ordinary skill in the art to modify the arrangement for transferring information of Chen by providing the plurality of

infrared light sources and a plurality of infrared cameras for positioning system as taught by Sangu et al. to improve the efficiency and accuracy of positioning a wafer fixed on a chuck.

With respect to claims 4 and 40, Chen and Sangu et al. do not clearly teach the use of infrared light sources comprises an infrared laser. However, the use of an infrared laser as an infrared light source is well known in the art. It would have been obvious to one of ordinary skill in the art to modify the infrared source of Sangu et al. by providing the conventional infrared laser for the advantage of providing an alternative light source giving the user a choice of a light source system to align marks on an object. With respect to claims 5 and 6, the stamp 62 of Chen is fixed to a three-dimensionally positionable stamp mount 60 (Chen, Fig.3 and paragraph [0036]).

Claims 2, 3, 7-13 and 30-39 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Chen in view of Sangu et al. as applied to claims 1, 4-6, 22, 23, 28, 29 and 40 above, and further in view of Farrar et al. (US 2002/0076896).

With respect to claims 2 and 34, Chen and Sangu et al. teach all that is claimed, except the alignment marks which are metal marks. Farrar et al. teaches the alignment marks which are the metal marks 200 formed in the substrate 10 for aligning the substrate 10 so that a trench 210 can be formed in the substrate. In view of the teaching of Farrar et al., it would have been obvious to one of ordinary skill in the art to modify the alignment marks of Chen and Sangu et al. by substituting the metal marks as taught by Farrar et al. to permit more precise control the position of a stamp over the desired position on a substrate or a wafer in place of the alignment marks 68, 70 of Chen. With respect to claims 7, 8, 30 and 31, the use of a chuck having a device for accepting/transferring the substrate from/to a handler is conventional. With respect to claims

9-12, 32,33, 37 and 38, the selection of the desired material, the dimension and the size of the substrate for the arrangement would be obvious through routine experimentation in order to get best possible patterns quality on a patterning layer. With respect to claim 13, the use of an etching process is inherently used in a photolithographic process.

***Response to Arguments***

Applicants' arguments filed on September 19, 2007 have been fully considered but they are not persuasive of any error in the above rejection.

Applicant argues that Chen and Sangu et al. do not teach or suggest a plurality of infrared cameras as recited in claims 1 and 22. Specifically, applicant argues that Sangu et al. does not teach the infrared light source because Sangu et al. teaches the use of an X-ray source to penetrated the circuit board and using a fluorescent screen to convert X-ray to a visible light or infrared light after the X-ray passing through a surface to be aligned.

However, as explained above, while Chen does not teach the use of plurality of infrared light sources, Chen teaches an arrangement for transferring information/structure and method of manufacturing a semiconductor wafer and Sangu et al. teaches clearly the plurality of X-ray sources or infrared light sources 1 and a plurality of CCD cameras or infrared cameras 2 for positioning a board on a stage or chuck 8 as recited in the claims. Clearly, the X-ray source of Sangu et al. can be converted to infrared rays or an infrared light sources as indicated by the paragraph [0036] of Sangu et al. It is noted that an infrared rays is a light source and the X-rays in Sangu et al. project an image on the board mark 7 which is made of copper foil. The conventional X-ray does not penetrated the layer covered by the copper foil as argued by applicant. Therefore, the combination of Chen and Sangu et al. renders obvious the structures as

recited in claims 1, 4-6, 22, 23, 28, 29 and 40. Additionally, the combination of Chen, Sangu et al. and Farrar et al. renders obvious the structures as recited in claims 2,3, 7-13 and 30-39.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Chen clearly teaches the arrangement for transferring information/structure and method of manufacturing a semiconductor wafer using an optical alignment system for aligning the semiconductor wafer and the stamp, and Sangu clearly teaches the conventional use of a plurality of infrared light sources for positioning a board on a chuck and a mask. Therefore, the combination of Chen and Sangu et al. is proper.

### ***Conclusion***

The patents to Fielden et al. and Baba et al. are cited to show other structures having obvious similarities to the claimed structure and method.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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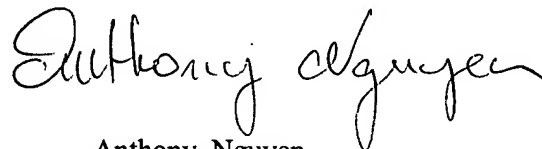
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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Nguyen whose telephone number is (571) 272-2169.

The examiner can normally be reached daily from 9 AM to 5PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen, can be reached on (571) 272-2258.

The fax phone number for this Group is (571) 273-8300.

A handwritten signature in cursive script that reads "Anthony Nguyen".

Anthony Nguyen  
11/21/2007  
Patent Examiner  
Technology Center 2800